ENTRY MONTH: 199710
ENTRY DATE: Entered STN: 19971105
Last Updated on STN: 19971105
Entered Medline: 19971020

AB During mammalian ontogenesis, the thymic "pure" endodermal epithelial anlage develops and differentiates into a complex cellular microenvironment. Beginning the 7-8th week of intrauterine development, thymic epithelial cells chemotactically regulate (induce) numerous waves of migration of stem cells into the thymus, including the CD34+, yolk sac-derived, committed hematopoietic stem cells. In vitro experiments have established that CD34+ CD38dim human thymocytes differentiate into T lymphocytes when co-cultured with mouse fetal thymic organs. Hematopoietic stem cells for myeloid and thymic stromal dendritic cells (DCs) are present within the minute population of CD34+ progenitors within the mammalian thymus. The common myeloid, DC, natural killer (NK) and T lymphocyte progenitors have also been identified within the CD34+ stem cell population in the human thymus. Interactions between the endocrine and immune systems have been reported in various regions of the mammalian body including the anterior pituitary (AP), the skin, and the central (thymus) and peripheral lymphatic system. The network of bone marrow derived DCs is a part of the reticuloendothelial system (RES) and DCs represent the cellular mediators of these regulatory endocrine-immune interactions. Folliculo-stellate cells (FSC) in the AP, Langerhans cells (LCs) in the skin and lymphatic system, "veiled" cells, lympho-dendritic and interdigitating cells (IDCs) in a number of tissues comprising the lymphatic system are the cell types of the DC meshwork of "professional" antigen presenting cells (APCs). Most of these cells express the immunocytochemical markers S-100, CD1, CD45, CD54, F418, MHC **class** I and II antigens, Fc and complement receptors. FSCs are non-hormone secreting cells which communicate directly with hormone producing cells, a form of neuro-endocrine-immune regulation. As a result, an attenuation of secretory responses follows stimulation of these cells. FSCs are also the cells in the AP producing interleukin-6 (IL-6), and they have also been identified as the interferon-gamma responsive elements. FSCs also express lymphatic DC markers, such as DC specific aminopeptidase, leucyl-beta-naphthylaminidase, non-specific esterase, MHC **class** I and II molecules and various other lymphatic immunological determinants [platelet derived growth factor-alpha chain (PDGF-alpha chain), CD13, CD14 and L25 antigen]. There is strong evidence that such DCs in the AP, and similar ones in the developing thymus and peripheral lymphatic tissue are the components of a powerful "professional" antigen presenting DC network. These APCs contain a specialized late endocytic compartment, MIIC (MHC class II-enriched compartment), that harbors newly synthesized MHC class II antigens en route to the cell membrane. The limiting membrane of **MIIC** can fuse directly with the cell membrane, resulting in release of newly secreted intracellular MHC class II antigen containing vesicles (exosomes). DCs possess the ability to present foreign peptides complexed with the MHC molecules expressed on their surfaces to naive and resting T cells. There are a number of "molecular couples" that influence DC and T lymphocyte interaction during antigen presentation: CD1/CD18 integrins, intercellular adhesion molecules (ICAMs), lymphocyte function associated antigen 3 (LFA-3), CD40, CD80/B7-1, CD86/B7-2, and heat-stable antigen. The "molecular couples" are involved in adhesive or co-stimulatory regulations, mediating an effective binding of DCs to T lymphocytes and the stimulation of specific intercellular communications. DCs also provide all of the known co-stimulatory signals required for activation of unprimed T lymphocytes. It has been shown that DCs initiate several immune responses, such as the sensitization of MHC-restricted T lymphocytes, resistance to infections and neoplasms, rejection of organ transplants, and the formation of T-dependent antibodies. (ABSTRACT TRUNCATED)

=> dis l5 1-2 kwic ibib abs

L5 ANSWER 1 OF 2 MEDLINE DUPLICATE 1
TI Recycling MHC **class** I molecules and endosomal peptide loading.
AB MHC **class** I molecules usually present peptides derived from endogenous antigens that are bound in the endoplasmic reticulum. Loading of exogenous antigens on **class** I molecules, e.g., in cross-priming, sometimes occurs, but the intracellular location where interaction between the antigenic fragment and **class** I takes place is unclear. Here we show that measles virus F protein can be presented by **class** I in transporters associated with antigen processing-independent, NH(4)Cl-sensitive manner, suggesting that **class** I molecules are able to interact and bind antigen in acidic compartments, like class II molecules. Studies on intracellular transport of green fluorescent protein-tagged **class** I molecules in living cells confirmed that a small fraction of **class** I molecules indeed enters classical MHC class II compartments (**MIICs**) and is transported in **MIICs** back to the plasma membrane. Fractionation studies show that **class** I complexes in **MIICs** contain peptides. The pH in **MIIC** (around 5.0) is such that efficient peptide exchange can occur. We thus present evidence for a pathway for **class** I loading that is shared with class II molecules.

CT
Cell Membrane: PH, physiology
*Endoplasmic Reticulum: PH, physiology
*Endosomes: PH, physiology
HLA-D Antigens: PH, physiology
Herpesvirus 4, Human: GE, genetics
***Histocompatibility Antigens Class I: PH, physiology**
Hydrogen-Ion Concentration
Kinetics
Luminescent Proteins: ME, metabolism
Measles Virus: IM, immunology
Recombinant Fusion Proteins: ME, . . .
CN 0 (HLA-D Antigens); 0 (Histocompatibility Antigens **Class** I); 0 (Luminescent Proteins); 0 (Recombinant Fusion Proteins); 0 (Viral Fusion Proteins)
ACCESSION NUMBER: 1999398707 MEDLINE
DOCUMENT NUMBER: 99398707 PubMed ID: 10468607
TITLE: Recycling MHC **class** I molecules and endosomal peptide loading.
AUTHOR: Gromme M; Uytdehaag F G; Janssen H; Calafat J; van Binnendijk R S; Kenter M J; Tulp A; Verwoerd D; Neefjes J
CORPORATE SOURCE: Department of Tumor Biology, The Netherlands Cancer Institute, Plesmanlaan 121, 1066 CX Amsterdam, The Netherlands.
SOURCE: PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, (1999 Aug 31) 96 (18) 10326-31. Journal code: PV3; 7505876. ISSN: 0027-8424.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199910
ENTRY DATE: Entered STN: 19991014
Last Updated on STN: 19991014
Entered Medline: 19991007
AB MHC **class** I molecules usually present peptides derived from endogenous antigens that are bound in the endoplasmic reticulum. Loading of exogenous antigens on **class** I molecules, e.g., in cross-priming, sometimes occurs, but the intracellular location where interaction between the antigenic fragment and **class** I takes place is unclear. Here we show that measles virus F protein can be presented by **class** I in transporters associated with antigen processing-independent, NH(4)Cl-sensitive manner, suggesting that **class** I molecules are able to interact and bind antigen in acidic compartments, like class II molecules. Studies on intracellular transport of green fluorescent protein-tagged **class** I molecules in living cells confirmed that a small fraction of **class** I molecules indeed enters classical MHC class II compartments (**MIICs**) and is transported in **MIICs** back to the plasma membrane. Fractionation studies show that **class** I complexes in **MIICs** contain peptides. The pH in **MIIC** (around 5.0) is such that efficient peptide exchange can occur. We thus present evidence for a pathway for **class** I loading that is shared with class II molecules.

L5 ANSWER 2 OF 2 MEDLINE DUPLICATE 2
AB . . . of "professional" antigen presenting cells (APCs). Most of these cells express the immunocytochemical markers S-100, CD1, CD45, CD54, F418, MHC **class** I and II antigens, Fc and complement receptors. FSCs are non-hormone secreting cells which communicate directly with hormone producing cells, e. . . . as the interferon-gamma responsive elements. FSCs also express lymphatic DC markers, such as DC specific aminopeptidase, leucyl-beta-naphthylamindase, non-specific esterase, MHC **class** I and II molecules and various other lymphatic immunological determinants (platelet derived growth factor-alpha chain (PDGF-alpha chain), CD13, CD14 and L25. . . . tissue are the components of a powerful "professional" antigen presenting DC network. These APCs contain a specialized late endocytic compartment, MIIC (MHC class II-enriched compartment), that harbors newly synthesized MHC class II antigens en route to the cell membrane. The limiting membrane of MIIC can fuse directly with the cell membrane, resulting in release of newly secreted intracellular MHC class II antigen containing vesicles. . .
ACCESSION NUMBER: 97437770 MEDLINE
DOCUMENT NUMBER: 97437770 PubMed ID: 9292303
TITLE: Dendritic type, accessory cells within the mammalian thymic microenvironment. Antigen presentation in the dendritic neuro-endocrine-immune cellular network.
AUTHOR: Bodey B; Bodey B Jr; Kaiser H E
CORPORATE SOURCE: Department of Pathology, School of Medicine, University of Southern California, Los Angeles, USA.
SOURCE: IN VIVO, (1997 Jul-Aug) 11 (4) 351-70. Journal code: A6F. ISSN: 0258-851X.
PUB. COUNTRY: Greece
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals